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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/736,462

12/15/2003

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600950-1010

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08/21/2007

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EXAMINER

METZMAIER, DANIEL S

ART UNIT

PAPER NUMBER

1712

MAIL DATE

DELIVERY MODE

.08/21/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/736,462	Applicant(s) CHMELKA ET AL.	
	Examiner Daniel S. Metzmaier	Art Unit 1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 February 2007 and 11 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-56 is/are pending in the application.
- 4a) Of the above claim(s) 3,4,8-28,31,32 and 36-56 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-7,29,30 and 33-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 June 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-56 are pending. 1-2, 5-14, 29-30 and 33-42 have been examined on the merits.

Election/Restrictions

1. Applicant's election of the invention of Group I, claims 1-14 and 29-42, and the species of (1) poly(ethylene oxide)- poly(propylene oxide)- poly(ethylene oxide), (2) silica, (3) spiropyran dye ((1',3'-Dihydro-1',3',3'-trimethyl-6-nitrospiro[2H-1-benzopyran-2, 2- 2 (*H*)-indole])), (4) refractive index, and (5) and optical field in the reply filed on April 4, 2006 and July 14, 2006 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claims 3-4, 8-28, 31-32, and 36-56 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention and non-elected species, there being no allowable generic or linking claim. Election was made **without** traverse in the replies filed on April 4, 2006 and July 14, 2006.
3. This application contains claims 3-4, 8-28, 31-32, and 36-56 drawn to an invention nonelected in the reply filed on April 4, 2006 and July 14, 2006. A complete reply to the final rejection must include cancellation of nonelected claims.

Response to Amendment

4. Applicants are required to provide a proper claim listing in response to this Office Action in accordance with the last paragraph of MPEP § 714 II C. (A), which states:

For any amendment being filed in response to a restriction or election of species requirement and any subsequent amendment, any claims, which are non-

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elected, must have the status identifier (withdrawn). Any non-elected claims which are being amended must have either the status identifier (withdrawn) or (withdrawn – currently amended) and the text of the non-elected claims must be presented with markings to indicate the changes. Any non-elected claims that are being canceled must have the status identifier (canceled). (Emphasis added).

Drawings

5. Applicants HAVE SUBMITTED an amendment canceling Fig. 2a and 2b in accordance to the Petition Decision mailed on February 28, 2006.

Specification

6. The disclosure is objected to because of the following informalities: the applications set forth in the specification that have matured into patents should be updated to indicate their patent number(s). An example is found at page 29, line 4. Applicants should check the 70 page specification and update the status where appropriate to include the issued patent number.

Appropriate correction is required.

It is suggested applicants amend by replacement of paragraphs as set forth in 37 CFR 1.121(b)(1)(i)-(iv) where only several of the paragraphs of the 70 specification are being amended. A substitute specification has NOT been required in this application. See 37 CFR 1.125.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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8. Claims 1-2, 5-6, 29-30, and 33-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Olsen et al, US 5,364,797. Olsen et al (column 5, lines 1 et seq) discloses forming detectors employing surfactant templating and incorporating a dye therein:

In a Fiber Optic Sensor, the analyte being detected changes the features of light transmitted along the fiber and these changes modify an electrical signal in a receiver. Fluorescent or dye molecules may be used as indicators. In order to use fluorescence in an optical fiber sensor, the spectral characteristics of the light source, dye and detector system must be matched. Light source and detector will typically be broadband devices, which have been restricted to operate over a more narrow wavelength range by the addition of lenses.

See Olsen et al example 24 and claim 16.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 7 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olsen et al, US 5,364,797, in view of Takatori et al, 3,901,769. Olsen et al (column 5, lines 1 et seq) discloses forming detectors employing surfactant templating and incorporating a dye therein as set forth in the preceding rejection.

Olsen et al differs from the claims in the use of spiropyran dyes.

Olsen et al (column 7, line 50 et seq, and column 8, lines 26 et seq) discloses a number of dyes that may be incorporated into the mesoporous materials including spirofurans.

Takatori et al (table 1) discloses incorporating dyes into porous silica including (column 9, line 63) spiopyrans.

These references are combinable because they teach dyes incorporated into porous silicates. It would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to employ Spiopyrans into the materials of Olsen et al for the advantageously desired optical effect.

Response to Arguments

12. Applicant's arguments filed 11 June 2007 have been fully considered but they are not persuasive.

13. Applicants (page 3 of response) assert the claim invention is directed to forming a mesoporous material having a dynamic change in refractive index and Olsen et al does not disclose said methods. This has not been deemed persuasive since the

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method requires the steps of combining a structure-directing amphiphilic block copolymer and a multivalent metal species, wherein said combination self assembles to for a mesoscopically structures material composite and at least partially filling said material composite with a material having a dipole moment that is variable responsive to a predetermined stimulus. Applicants clearly contemplate SiO_2 as a multivalent metal species (see at least page 21, lines 7-9). Olsen et al discloses methods of making mesoporous materials by combining structure-directing amphiphilic block copolymers and multivalent metal species such that said combination self assembles to for mesoscopic structures and at least partially filling the pores thereof with a dye, which would inherently is a material having a dipole moment and is variable responsive to a predetermined stimulus.

The materials of Olsen et al are taught to desirably optically matched. Dyes and the composites would have been expected to have some variable response in refractive index to an optical field at particular wavelengths.

14. Applicants (page 3) assert that Olsen et al changes in response to a chemical stimulus rather than an optical stimulus. This has not been deemed persuasive since the claims do not exclude also a change in response to a chemical stimulus. Attention is further directed to claim 6.

15. Applicants (pages 3 and 4) assert the claimed materials have a dynamic change in refractive index. The examiner does not find the term "dynamic" as characterized by applicants in the claims. Said claims have a variable response but said response is not claimed as dynamic.

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16. Applicants (page 4) assert the Olsen et al materials are directed to MCM-41 (pore size of 20 nm) rather than SBA-15 (pore size of 8 nm) mesoporous materials.

This has not been deemed persuasive since the claims do not make this distinction.

17. Applicants (pages 4 and 5) assert references are not combinable. This has not been deemed persuasive since the skilled artisans would have recognized the utility of incorporating the dyes employed in porous silica disclosed in the Takatori reference in the materials of Olsen et al for the broadly disclosed dyes disclosed therein.

Conclusion

18. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Metzmaier whose telephone number is (571) 272-1089. The examiner can normally be reached on 9:00 AM to 5:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Daniel S. Metzmaier
Primary Examiner
Art Unit 1712

DSM